

Abstract of the Disclosure

5 A semiconductor substrate having a shallow trench
isolation (STI) structure and a method of manufacturing the
same are provided, i.e., an isolation substrate in which
grooves are selectively formed at predetermined locations
of the semiconductor substrate and oxide films using
organic silicon source as material are buried in the
grooves as buried oxide films. The present invention is
10 characterized in that the buried oxide films are annealed
at a predetermined temperature within the range of 1100 to
1350 °C before or after planarization of the semiconductor
substrate such that ring structures of more than 5-fold
ring and ring structures of less than 4-fold ring are
15 formed at predetermined rates in the buried oxide films.
The above annealing allows stress of the oxide film buried
in the grooves to be relaxed. Hence, the generation of
dislocation is suppressed.

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